Illawarra Amateur Radio Society

Propagator July 2026

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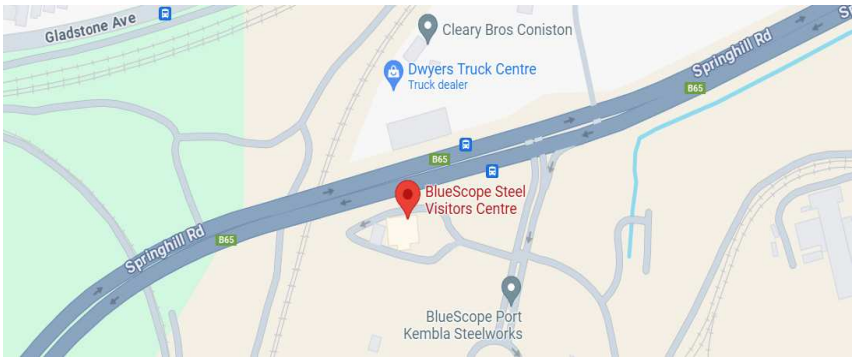
Upcoming Meeting on the 14th July 2026

The next meeting will be at the Blue Scope Steel visitors centre 7.30pm

Blue Scope Northgate entrance off Springhill Road (See website for detailed map)



VK2RUW (Knights Hill)
34.6231° S, 150.6942° E
QF55IJ

AMATEUR RADIO IN THE ILLAWARRA SINCE 1948

VK2RMP (Maddens Plains)
34°15'30.6"S 150°56'47.4"E
QF55LR

VK2AMW

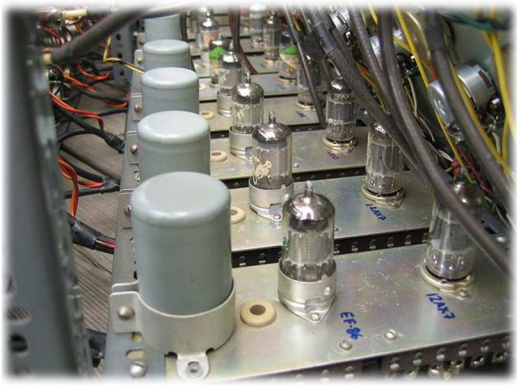
Our last meeting 9th June 2026

The Einstein of mixing consoles, Arthur Rupert Neve presented by Ned VK2AGV

Ned's flamboyant style always draws a crowd. Even without an amateur radio focus, the highly technical presentation was well worth attending.

Neve designed the iconic analogue recording equipment and mixing desks that shaped the sound of 20th-century popular music. His custom-built hardware became the industry standard for legendary studios like Abbey Road and Sound City, capturing definitive albums for artists like The Beatles, Nirvana, Pink Floyd, Fleetwood Mac, and Aerosmith

Thanks to Ned for the awesome presentation which even included his own mixing console, just to make sure the audio was perfect.



As always there was some chocolate cookies enjoyed with a nice hot cup of brew. Looking forward to the next meeting.

SNOWBALL

For $5 you can earn some good cash, and all monies go to your society, win-win.

As usual see Simon VK2KU, the fella with the coloured balls and big smile

The Snowball was drawn and the winner was Keith VK2KQB ball number 22. A lucky number for Keith as the prize was $135.00

If you want a chance at winning some good cash money, don't forget to play SNOWBALL at the next meeting.

The Disposables Table

Great donations this month, from solar panels, high power computer server, monitors, SWR meters, antennas, books and other items. Thanks to all that donated!

NEXT Meeting…….

APRS

What you need to know with Roger VK2VRK.

Roger has been under the pump at work and had to cancel this presentation before, so we are really looking forward to this one.

The IARS Flying Gang

The Flying Gang is a volunteer team to support IARS members who are unable to install or repair their antenna systems due to age, injury, or other limitations.

Many members are finding it increasingly difficult to stay active on the air—especially when antennas are damaged by storms or when new systems need to be installed.

If you need assistance, simply reach out to the team using the email addresses listed below. We'll coordinate with you to provide the help you need.

The flying gang team members, please REACH OUT to anyone of the team below.

Simon VK2XQX, Simon VK2KU, Keith VK2KQB, Adam VK2AEV, Phil VK2CPH, Tony VK2TS, Mal VK2DXM and …..

Please welcome our newest member of the Flying Gang, Bruce North VK2ZPN 😊

Or contact us using any one of the emails below.

iars.keithb@gmail.com ; iars.simonr@gmail.com ; simon.ferrie3@det.nsw.edu.au

Other contacts like phone numbers are on the club website at https://www.iars.org.au/?page_id=29

A very big THANK YOU!!!

The **Flying Gang** has been on the move and over the past three weeks have assisted on two very big jobs.

1. The removal of the antenna farm at Brian's (VK2AH) QTH in Bulli. Yes unfortunately Brian has to downgrade his station due to the old age creeping in (we all get that one day). This meant the decommissioning of his rather large HF antenna system. The Flying Gang got together and accomplished the task for Brian.
   TEAM ON DUTY : Phil VK2CPH; Simon VK2XQX; Simon VK2KU; Bruce VK2ZPN; Adam VK2AEV; Keith VK2KQB



Bruce, Phil and Simon checking out things with Simon and Keith making sure Brian VK2AH tower did not break the neighbours fence.

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2. The removal of Keith's (VK2KQB) tower as he is moving house.

Unfortunately no pictures for this as the cameraman was too busy working 😊
However if you visit the IARS Facebook site, there is a great video of the tower falling over!

The task was carried out by the usual suspects and mastered perfectly with the tower landing in the perfect spot. We then had to cut it up so that it would go on the hired Kennards trailer, off to the tip.
Bruce did go through quite a number of cutting disks to chop the tower up.
TEAM ON DUTY : Phil VK2CPH; Simon VK2XQX; Tony VK2TS; Bruce VK2ZPN; Adam VK2AEV

Thanks again to the team for all the assistance given to IARS members

Licensing and upgrades?

The IARS **can help** with obtaining your Foundation, upgrading to Standard or Advanced from *the comfort of your own home,* and its FREE!!! *

We have approved **ACMA** accessors that can offer remote or face to face assessments for the **ACMA**

Please contact Keith VK2KQB at iars.keithb@gmail.com for further information on training and assessments.

Your society supports further learning, please find out more on how we can help you.

The IARS helping Amateur Radio grow in Australia

This year the IARS has assisted 4 new amateur radio enthusiasts to get their licence

Australian Government | acma Australian Communications and Media Authority

NEWS and MORE!!

Future Spectrum Priorities & Peak Body Responses

Five-Year Spectrum Outlook https://www.acma.gov.au/articles/2026-03/acma-plan-sets-spectrum-path-through-2031 handles general spectrum pathways. Future, minor updates to the Amateur Class Licence are actively factored into the broader five-year timeline.

WIA Advocacy Campaign: In response to the work program, the https://www.wia.org.au/newsevents/news/2026/20260507-1/index.php lodged formal feedback pushing the ACMA for clear operator rights documentation, higher-power access frameworks, and call-sign streamlining for external territories.

5-Year Reconfirmation: While the class licence removes annual fee barriers, operators must still use the https://www.acma.gov.au/amateur-radio-resources to self-manage and reconfirm their active call signs every 5 years to keep them from reverting to "available" status.

If you would like to find out more about amateur radio upgrades, here are some handy links to help.

https://www.acma.gov.au/qualifications-operate-amateur-radio

https://www.acma.gov.au/amateur-radio-resources

https://www.acma.gov.au/amateur-radio-accredited-assessors

https://www.acma.gov.au/amateur-radio-licences

https://www.acma.gov.au/technical-details-amateur-radio-licences

https://www.acma.gov.au/amateur-radio-operating-procedures

https://www.acma.gov.au/amateur-radio-call-signs

https://www.acma.gov.au/amateur-class-licence

https://www.acma.gov.au/amateur-radio-related-fees

IARS NETS

1. Saturday Morning, the EAST COAST NET hosted by Steve VK2BGL at 9.30am

You are invited to join Steve every **Saturday at 9.30am** on our **146.850MHz** repeater (linked to 146.675MHz) or **VK2BGL-R** on Echo-link for a very enjoyable morning of general discussions from amateurs who log in from all over the world. This NET is linked to multiple repeater systems including VK2RFS south coast.
Join Steve and everyone for a very enjoyable 2 hours on Saturday morning.

The IARS would also like to thank Doug VK2XLJ and Angelo, VK2NWT who are is always willing to assist whilst Steve is away.

2. **NEW NET** Yes we have a NET IARS net on 2m , 144.150MHz USB on Monday Evenings from 8pm. Phil VK2CPH or (Chairman Phil 😊 as some like to call him) will be your host.

3. **IARS Tuesday evening weekly 80m NET on 3.666MHz at 8.30pm hosted by Mal VK2DXM using VK2AMW.**
Every Tuesday evening, (expect the second Tuesday of the month) for a great get together on 80m. Signal reports, news and general discussions are the agenda. Normally runs for around 60minutes.

4. **IARS Wednesday evening weekly 6m NET, 8pm Maddens plains 6m Repeater on 53.650Mhz with a – 1Mhz offset. 123Hz CTCS tone enabled due to interference**
Hosted by Chris VK2CDB and Simon VK2XQX, (While Geri VK2UTE is unavailable)
General discussions about building antennas for 6m, transceivers and what else comes to mind, this net is normally between 30 and 60minutes.

5. **IARS Thursday evening weekly 10m NET, 8PM on 28.466Mhz +/- for QRM/QRN Hosted by Tony VK2TS**
General discussions about building antennas for 10m, transceivers and what else comes to mind, this net is normally between 30 and 60minutes.

6. **IARS Friday evening weekly 70cm NET , 8PM on 439.675MHz ** with – 7MHz offset (No CTCSS required)**
Hosted by Rob VK2XIC
General discussions keeping the repeaters in work, ***"If we don't use it, we may lose it "***

IARS REPEATERS

VK2RUW (Knights Hill) VK2RMP (Maddens Plains)

146.675 MHZ >>>>> *linked* <<<<< 146.850 MHZ

Current Repeater STATUS

- **439.675 with a – 7MHz offset, C4FM Enabled. OK – On Air *****
- **147.275 with a + 600kHz offset NO CTCSS, C4FM enabled OK – On Air *****
- **146.850 with a – 600kHz offset (linked to 146.675) NO CTCSS OK– On Air****
- **146.675 with a – 600kHz offset (at Knights Hill, linked to 146.850) NO CTCSS OK– On Air**
- **53.650Mhz with a – 1Mhz offset (123Hz CTCSS tone enabled due to interference) OK– On Air *****
- **438.725Mhz with a -5mHZ offset DMR only, OK – On Air**
- **1296.850Mhz Experimental Beacon/Simplex repeater, Maddens Plains OK – On Air ***
- **Echo-link VK2MT-R via 146.850MHz also linked to 146.675MHz and VK2BGL-L OK**
- **APRS DIGI-PEATER on 145.175MHz OK– On Air**
- **PACKET 2M on 147.575Mhz Temporarily off air**

The IARS welcomes any feedback on our repeater systems.

Please send all your feedback to iars.keithb@gmail.com and it will be passed on to our repeater team.

If the repeaters are silent, why not just give out a call, who knows who may be on the other end of the tower.

Latest Repeater Report: (no changes from last month)

* Note, this will be changing to 1.293 800 GHz Simplex soon, however, plans are in place for it to become a Full Duplex repeater system. The equipment has been sourced and should be ready before the end of the year if all goes to plan.

** **146.850MHz repeater (which is 146.250MHz RX)** at Maddens Plains is operating off a temporary antenna until the main dipole is repaired/replaced. We are in talks with an authorised tower maintenance team to carry out the works.
Please advise if you are having signal difficulties, include your location with a grid square.

*** After the huge windstorms we recently had the Tri-Band antenna number 3, which is 67meters up Maddens Plains tower is leaning at 45degrees with the underneath pointing to Wollongong, therefore all signals into Wollongong will be affected until this is rectified. (This will most likely be carried out at the same time as item ** previous

The ONLY Services still affected are RX 52.650MHz, RX 147.875MHz and TX 439.675MHz.

LOOKING FOR SOMETHING to SWAP, BUY, SELL, an OLD PART

Parts you may need for repairs or some radio gear you no longer need that could go to a new home…….?
Email iars.keithb@gmail.com

Electronic component and service suppliers

JLCPCB https://jlcpcb.com

element14 AN AVNET COMPANY https://au.element14.com

RS https://au.rs-online.com/web/

MOUSER ELECTRONICS https://au.mouser.com

DigiKey https://www.digikey.com.au

Minikits https://www.minikits.com.au

core ELECTRONICS https://core-electronics.com.au

Elite Communications & Electronics https://www.elitecommunications.com.au

Little Bird Electronics https://littlebirdelectronics.com.au

ATR Amateur Transreceiver Radio Supplies https://amateurradiosupplies.com.au

BNCom Australia. https://bncom.com.au

VK RADIO **YAESU Sales and repairs** https://www.vkradio.com.au

DXing https://dxing.com.au

TELCO ANTENNAS https://www.telcoantennas.com.au

ALTRONICS https://www.altronics.com.au

jaycar https://www.jaycar.com.au

TWR Technology ICOM agent carlo.twr@gmail.com

Radio Communications Equipment Supply, Service including radio and antenna installations, support local Wollongong business

If you know of a good supplier of electronic stuff or services 😊, please share it with us so we can all benefit.

Send information to iars.keithb@gmail.com and we will publish it in the next propagator

Share it with us, this could be suggestions, technical ideas, circuit diagrams, IARS community projects, pictures of your latest shack project, in fact

ANYTHING of interest

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RF Power Amplifiers for SSB

If you thought last month's 'power paradox' meant you had to compromise on high-power operations, think again. For those of you who love a big, commanding signal, the game is changing. New technology is here to make high-power setups smarter and more efficient than ever before.
We might be legally capped at the **ACMA 400-watt limit** for the time being, but how we maximize every single one of those 400 watts is about to get a whole lot better. Last month we took a look at our antenna and feed systems to get more wattage in the air, lets look at our amplifiers.

This article covers the core trade-offs of linearity versus efficiency in Single-Sideband (SSB) amplification. It traces the technology from traditional vacuum tubes and analogue solid-state linear to advanced highly efficient digital switching topologies.

The Core Challenge: Linearity vs. Efficiency

Why SSB Requires Linearity?

- **Variable Envelope:** Unlike FM or CW (which are constant-amplitude), an SSB signal varies continuously in amplitude and phase.
- **Intermodulation Distortion (IMD):** If an amplifier is non-linear, it mixes the internal frequencies of a voice signal. This produces unwanted "splatter" in adjacent channels.
- **Fidelity Preservation:** Linear operation ensures the output waveform is a clean replica of the input.

Defining Efficiency

- **Collector/Drain Efficiency (η): The ratio of RF output power to DC input power.**

$$\eta = \frac{P_{\text{RF,out}}}{P_{\text{DC}}} \times 100\%$$

- **Power Added Efficiency (PAE): Accounts for the RF drive power required, which is critical for low-gain solid-state chains.**

$$\text{PAE} = \frac{P_{\text{RF,out}} - P_{\text{RF,in}}}{P_{\text{DC}}} \times 100\%$$

- **The Trade-Off: High-efficiency classes (like Class C) achieve efficiency by clipping waveforms, which destroys SSB signal integrity**

Old/Traditional Technology: Conduction-Angle Linear

Traditional "linear" amplifiers operate in the analogue domain, using the conduction angle (how long the tube or transistor conducts during a 360° RF cycle) to preserve signal linearity.

Class A

- **Conduction Angle: 360° (always conducting).**
- **Theoretical Maximum Efficiency: 50%.**
- **Characteristics: Perfect linearity but burns massive power even when you are not speaking.**

Class B

- **Conduction Angle: Exactly 180° (conducts for half the cycle).**
- **Theoretical Maximum Efficiency: 78.5%.**
- **Characteristics: Requires a push-pull configuration to reconstruct the full wave but causes severe crossover distortion at the crossing point.**

Class AB (The Amateur Radio Standard)

- **Conduction Angle: $180° < \theta < 360°$.**
- **Theoretical Maximum Efficiency: Between 50% and 78.5%.**
- **Practical Efficiency: Typically, 35% to 45% during typical SSB voice peaks.**
- **Characteristics: A small "idling current" is applied to keep the devices slightly on, eliminating crossover distortion while retaining decent peak efficiency**

Metric	Class A	Class B	Class AB (Standard)
Conduction Angle	360°	180°	181° - 359°
Max Theoretical Efficiency	50%	78.5%	≈ 60% - 70%
Real-world Voice Efficiency	< 25%	≈ 50%	≈ 35% - 45%
Linearity / Splatter	Excellent	Poor (Crossover)	Good (Adjustable bias)

Modern Technology: High-Efficiency Topologies

Modern solid-state amplifiers utilize complex system architectures or dynamic loading to maintain linearity while achieving high power efficiency.

Doherty Amplifiers

- **Concept:** Uses two parallel amplifiers—a "Main/Carrier" amplifier (biased in Class AB) and a "Peaking" amplifier (biased in Class C).
- **Operation:** At low power, only the Carrier amplifier runs. As voice peaks hit, the Peaking amplifier kicks in and dynamically modulates the apparent load impedance.
- **Benefit:** Keeps the efficiency high across a wide dynamic range, preventing the massive efficiency drop-off during low-amplitude portions of an SSB signal.

Digital Pre-Distortion (DPD)

- **Concept:** Rather than relying purely on hardware linearity, modern SDR transceivers sample the final RF output.

- **Operation:** An algorithm calculates the inverse mathematical distortion of the PA and applies it to the low-level digital signal *before* amplification.
- **Benefit:** Allows an amplifier to run much harder and closer to saturation (highly efficient) while maintaining a surgically clean, splatter-free SSB signal.

The Theory Behind Switching Topologies & Class D

Class D introduces a paradigm shift: instead of acting as variable resistors, the active devices act purely as on/off switches.

Why Switching Amplifiers Save Power.

Power dissipation in any transistor is defined by the instantaneous product of voltage and current:

$$P_{\text{diss}} = V_{\text{device}} \times I_{\text{device}}$$

When OFF: The current through the switch is zero I = 0, so P = V * 0 = 0W
When ON: The voltage drop across the switch is ideally zero V ≈ 0, so P = 0 * I = 0W

Because the transistor never sits in the middle (the linear region), the theoretical efficiency is 100%. Real-world losses only occur during the finite time it takes to flip between states.

The Class D Architecture

- Push-Pull Configuration: Uses a pair of complementary switching transistors (usually MOSFETs or GaN FETs) configured as a two-pole switch.
- Square Wave Generation: Alternately drives the switches to generate a high-power square wave at the operating frequency.
- Low-Pass/Band-Pass Filtering: A high-Q tank circuit or low-pass filter strips away the odd harmonics (3f, 5f, 7f...) created by the square wave, restoring a clean sine wave to the antenna.

Making Class D Work for SSB: Kahn's EER Method

Because a Class D stage is hard-switched, directly injecting a variable-amplitude SSB signal into the gates will clip the signal completely, destroying the amplitude information. To transmit SSB, modern designs must implement **Kahn's Envelope Elimination and Restoration (EER)** technique:

Signal Splitting: The low-level SSB signal is split into two components: its **Phase** (θ) and its **Envelope/Amplitude** (A).

1. **Phase Path (Limiting):** The signal is passed through a limiter to strip the amplitude, creating a constant-envelope phase signal. This constant-amplitude signal safely drives the Class D RF gates.
2. **Envelope Path (Modulation):** An envelope detector tracks the amplitude variations. This low-frequency signal drives a highly efficient Class S or PWM switching modulator (effectively a high-speed buck converter).
3. **Restoration:** The output of the envelope modulator dynamically modulates the **DC drain supply voltage** Vdd of the Class D stage.

By fluctuating the power supply in perfect synchronization with the phase variations, the amplitude is completely restored at the output, delivering a highly linear, highly efficient SSB signal.

- **The Past:** Class AB has served us well, but it turns over half of our DC battery power into shack-warming heat.
- **The Present:** Systems using GaN transistors coupled with Digital Pre-Distortion allow compact, cool-running high-power solid-state linears.
- **The Future:** Pure switching architectures (Class D/E) using polar envelope modulation (EER) are redefining efficiency limits, stretching portable battery operations further than ever before.

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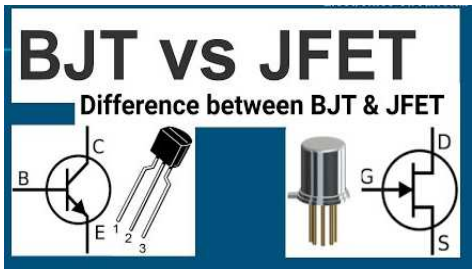


Heard the term BJT and JFET ?

A transistor acts like an electronic valve, using a small electrical signal at one terminal to control a much larger electrical current flowing between two other terminals. While both BJTs (Bipolar Junction Transistors) and JFETs (Junction Field Effect Transistors) achieve this, they work on fundamentally different principles.

BJT (Bipolar Junction Transistor)

A BJT is a bipolar device because its current is carried by two types of charge carriers: electrons and holes. Think of it as a current amplifier.

- **The Terminals:** Base (B), Collector (C), and Emitter (E).
- **How It Works:** A small electrical current injected into the **Base** terminal opens up the internal pathway between the **Collector** and the **Emitter**. If there is no base current , the transistor stays off.
- **Analogy:** Imagine a water valve with a heavy spring holding it closed. You must physically push the lever (apply base current) to let the water flow. Pushing harder lets more water pass.

JFET (Junction Field Effect Transistor)

A JFET is a **unipolar** device because the current flows through a single, unbroken channel using only one type of charge carrier (either just electrons or just holes). It acts like a **voltage-sensitive switch**.

- **The Terminals**: Gate (G), Drain (D), and Source (S).
- **How It Works**: Current naturally flows from the **Source** to the **Drain** through a physical semiconductor channel. Applying an electrical voltage to the **Gate** creates an electric field that narrows this channel (called a depletion region), pinching off the current flow.
- **Analogy**: Imagine a flexible garden hose with water running through it. The Gate acts like your hand squeezing the hose shut. Applying voltage is like squeezing harder—it restricts or stops the flow completely without any water entering your hand.

Side-by-Side Science Project Comparison

Feature	BJT (Bipolar Junction Transistor)	JFET (Junction Field Effect Transistor)
Control Signal	Current (I_B controls I_C)	Voltage (V_{GS} controls I_D)
Charge Carriers	**Bipolar** (Both holes and electrons)	**Unipolar** (Only holes OR electrons)
Input Impedance	**Low** (Draws current from the input source)	**Extremely High** (Virtually no current enters the gate)
Default State	**Normally OFF** (Requires base current to turn on)	**Normally ON** (Requires gate voltage to turn off)
Sensitivity	Highly sensitive to temperature variations	Highly stable against temperature changes

Use a BJT if you need a strong, fast switch for driving heavy loads like motors or bright LEDs, where drawing current from your control source isn't an issue.

Use a JFET when dealing with incredibly delicate incoming signals (like an antenna or microphone input) where drawing even a tiny bit of current would distort or ruin the signal.

Handy On Line Calculators

Send us your favourite handy calculator link so we can post it here!

Skin Depth Calculator https://www.omnicalculator.com/physics/skin-depth

Ladder line calculator www.smrcc.org.uk/tools/OpenWire.htm

Cavity Filter designer https://www.changpuak.ch/electronics/Coaxial_Tank_VHF_Filter_Designer.php

Cavity resonance calculator https://learnemc.com/ext/calculators/cavity_resonance/index.html

COAX LOSS Calculator https://kv5r.com/ham-radio/coax-loss-calculator/

Impedance ….. https://www.omnicalculator.com/physics/rlc-impedance

Wavelength …. https://www.omnicalculator.com/physics/wavelength

PI attenuator values …… https://www.omnicalculator.com/other/pi-attenuator

Xc …… https://www.omnicalculator.com/physics/capacitive-reactance

XL …… https://www.omnicalculator.com/physics/inductive-reactance

Cut Off ….. https://www.omnicalculator.com/physics/cutoff-frequency

VSWR …… https://www.omnicalculator.com/physics/vswr-voltage-standing-wave-ratio

LM317 Regulator resistor selector ….. https://www.omnicalculator.com/other/lm317

Resistor Colour code calculator….. https://www.digikey.com.au/en/resources/conversion-calculators/conversion-calculator-resistor-color-code

Resistor Heat rise ……. https://calculator.academy/resistor-heat-calculator/

Volt Drop Calculator AC and DC …….. https://www.rapidtables.com/calc/wire/voltage-drop-calculator.html

Helix antenna calculator ……. https://sgcderek.github.io/tools/helix-calc.html

Parabolic dish calculator ……. https://www.everythingrf.com/rf-calculators/parabolic-reflector-antenna-gain

We are looking for more handy on-line calculators, if you have one that isn't listed above, please share with us so that more amateur radio enthusiasts can benefit ☺

OR

If you have any links to handy hints or information, please send it to us!

RES
Radio & Electronics School
Established 1997

How many of these can you still answer correctly?

Question 1 The nominal characteristic impedance of a half wave folded dipole is:

(a) 50 ohms
(b) 300 ohms
(c) 72 ohms
(d) 150 ohms

Question 2 The AGC system in an AM receiver works by sampling the level of the:

(a) carrier
(b) modulation
(c) frequency
(d) deviation

Question 3 The velocity of propagation of radio waves in free space is:

(a) 3×10^8 m/s
(b) 100 km/s
(c) 10,000 mile/h
(d) 3×10^6 km/s

Question 4 A pi-coupling network used at the output of the final power amplifier stage in a transmitter:

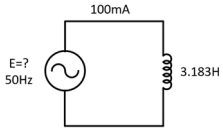
(a) prevents high tension voltage from being applied to the antenna and acts as a high pass filter
(b) prevents the power amplifier from developing parasitic oscillations
(c) matches the power amplifier output impedance to that of the antenna load and suppresses harmonics
(d) enables a half wave dipole antenna to be voltage fed

Question 5 The level of gate bias voltage on a FET to reduce the drain current to zero, is known as:

(a) cut-off voltage
(b) channel voltage
(c) pinch-off voltage
(d) source voltage

Question 6 The voltage applied across this inductor is:

(a) 1 volt
(b) 10 volts
(c) 100 volts
(d) 1000 volts



Answers next propagator ☺

Answers to the last propagator questions … Q1 = C ; Q2 = A; Q3 = A; Q4 = D; Q5 = B ; Q6 = D

How well did you do, will you still pass the Amateur Radio test?

BLAST FROM THE Past

OLD PROPAGATOR MEMORIES

THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY
PO BOX 1838 WOLLONGONG NSW 2500

VOLUME 84, NUMBER 7 JULY 1984
Registered by Australia Post Publication No. NBH1491

MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M. AT THE STATE EMERGENCY SERVICES BUILDING, MONTAGUE STREET, NORTH WOLLONGONG. VISITORS ARE WELCOME TO ATTEND MEETINGS.

Last Month's Meeting.

The dream of a permanent home became a reality on June 12 th last with the holding of our monthly meeting in the new SES Headquarters in Montague Street. Congratulations to Pres. Dave VK2DFL and the Boys whose liaison with the SES over the years has resulted in this permanency.

Denis VK2DMR introduced the members to the more detailed workings of the SES by way of two video films on the 1976 floods in North-West NSW and the Dapto floods in February of this year. The films were followed up with a talk by Denis and during supper, a guided tour around the building.

The following new and upgraded callsigns were announced: Gerhard Mueller VK2XGA; Bill Jut VK2KWJ; Harry VK2JHW, was VVZ; Andrew McEwan VK2XGC; Dave VK2NH, was PRA; and Robert (awaiting allocation).

This Month's Meeting.

- will be held TUESDAY, 10th July again, at the SES Headquarters. On the night, Gary Crapp from Dick Smith Enterprises will present the trophies for the UHF Kilometer Kontest so ably run by Dave VK2EZY. Would entrants please bring their latest results for calculation on the night.. This will enable Dave to carry out final assessments before presentation. Gil McPherson will also be present to give an update on the newly released VHF Kit.

Asst. Editor Ken VK2DOI should be returning soon to the front page position. It's good to hear you have passed your fitness test Ken and good to hear you up on our 80m Net.

73's Murray VK2MY.....

CB freaks turn on, tune in and blow themselves up

Thousands of users of citizens' band radios in Britain may this week attempt to swindle petrol stations by using high-powered transmitters to confuse electronic pumps and to drive off with cheap petrol. But the dodge, revealed in the British press last weekend, is, quite literally, lethal.

Amateur radio "hams", who often despise CB freaks for their clumsy use of the airwaves, have long been aware that a high-power radio transmitter can upset the electronics in a petrol pump. But they also know that it could trigger an explosion. This is why drivers with high-power transmitters in their cars switch them off when they are on the forecourt of a garage. High-energy radio waves can create a spark in metal objects that triggers an explosion. Explosive experts are well aware of the phenomenon, and the army even exploits it in Northern Ireland.

Licensed radio "hams" can legally install 100-watt FM amplifiers in their cars for long-distance two-way communication on the move. CB enthusiasts are legally limited to a few watts. But they often install equally powerful amplifiers or "after burners" to boost their transmitted signal. This way they can blot out others trying to use the same frequency. The situation is now so bad in Britain that in most major cities sensible CB communication is impossible.

Any high-power radio transmitter can upset electronic equipment, especially if it includes integrated-circuit chips and microprocessors. The radiation causes logic gates to open when they should close and makes synchronising circuits run at the wrong speed.

Professional electronic equipment has built-in shielding to block unwanted radiation. But domestic equipment, and until now petrol pumps, has not been shielded. So high-power radiation from a nearby transmitter can easily make the electronics go haywire. Whether the petrol meter runs fast or slow may be a matter of chance however.

In the US, CB freaks have found that they can upset electronic breathalysers. The only problem is that they cannot be sure that they will score an artificially low reading. Conjurers use a similar technique to upset watches without touching them.

The biggest risk for pump fiddlers is an explosion. Any metal rod which has a length that is a simple fraction of the transmitted wavelength can act as an aerial and generate an electronic signal. If the transmitter power is high and the range short, the signal may be strong enough to cause a spark. This can ignite petrol or detonate an explosive.

When contractors had to blast in Central Park in New York recently, they put up notices warning everyone to switch off their CB transmitters But the explosive handlers were worried in case this merely encouraged some people to transmit at full strength and listen for bangs.

The British army in Belfast has for many years driven trucks with high-power, wide-band transmitters, broadcasting random frequencies at full blast. Anyone mixing an unstable home-made bomb, or planting it, is likely to disappear in a puff of smoke. This is why the IBA is moving one of its medium-wave commercial radio transmitters away from an oil refinery in the north of Scotland. The sound of pop music could have set the oil on fire.

New Scientist, 3 November 1983

Will share more oldies next month.

To read more information about this old propagator and others, use the link below

https://www.iars.org.au/wp-content/uploads/2020/09/1983-06-Jun.pdf

News & Upcoming contests

Trans-Tasman Low-Band Contest

Trans Tasman Low Band Contest

Contest Manager

Alan Shannon VK4SN

Contest Introduction

Next contest - 18 JUL 2026

The Trans-Tasman contest, held on the 3rd weekend in July, aims to encourage Low Band activity between VK and ZL

Only contest bands 160 80 and 40M are allowed with SSB, CW and Digital (RTTY OR PSK)

From 2018 this contest is an official WIA Contest and will count towards the Peter Brown Contest Champion Awards.

Aim Of The Contest

Work as many VK and ZL Prefixes and as many different stations on 160 80 and 40M in a short 6 hour evening contest..

More Information https://www.wia.org.au/members/contests/transtasman/

23cm Fun day on the 23rd of EVERY MONTH !!

If you are interested in 23cm or higher communications, the local IARS members are getting together with the MSCARC members on the 23rd of every month to have a fun day around the Illawarra area.

The SHF team are even looking at 13cm fun day on the 13th of every month, for more information please contact the SHF organiser Rob Heyer VK2XIC at **vk2xic@gmail.com**

Amateur radio news from around the world!

Use these handy links if you would like to see what is going on around the amateur radio world.

Radio Society of Great Britain https://rsgb.org/main
American Radio league https://www.arrl.org
Amateur Radio Germany https://www.darc.de/der-club/referate/ausland/english-version/
South African Radio League www.sarl.org.za
Italian Amateur Radio https://www.ari.it
Amateur radio France https://www.radioamateurs-france.fr
Amateur radio Russia https://srr.ru/sbory24_6/
Amateur Radio Japan https://www.jarl.org/English/
DX ATLAS DOWNLOAD https://dxatlas.com/Download.asp
https://daily.hamweekly.com

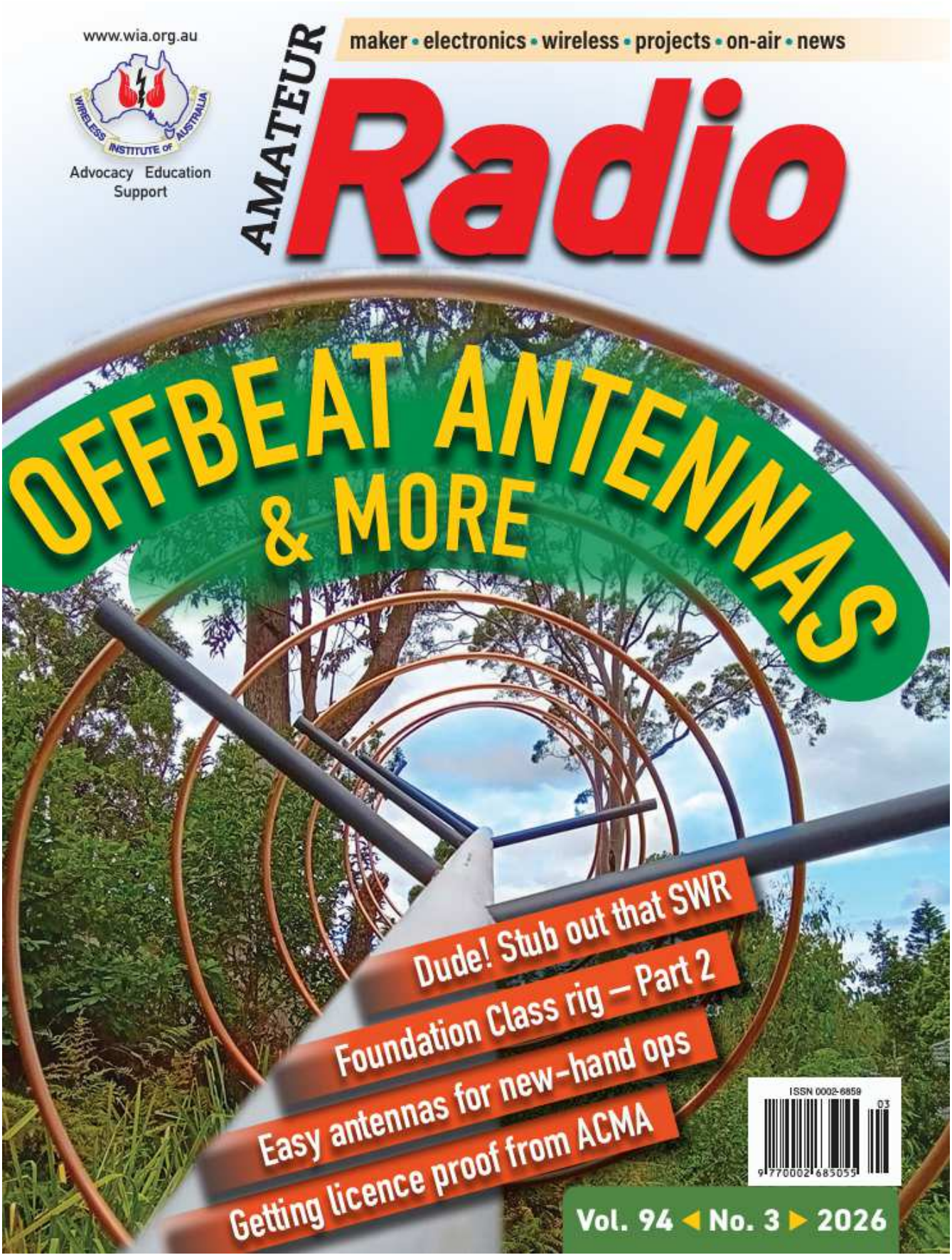
Communications Satellites

Status information and latest updates >>> https://www.amsat.org/two-way-satellites/

https://amsat-uk.org/satellites/frequencies-of-active-satellites/

It’s here, the latest edition of your favourite magazine!

Missed out? Become a WIA member today to support Australia's most recognised amateur radio body.



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AMATEUR Radio

Serving Australian radio amateurs since 1933

The Journal of the Wireless Institute of Australia

Volume 94
Number 3
2026
ISSN 0002-6859

Proud to be produced and printed in Australia

Price $16.50

Registered office
Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153 Australia
Phone: 03 9729 0400 Fax: 03 9729 7325

Production deadlines
All articles, columns, Hamads, and advertising bookings for Volume 94, No. 4 – **26 June 2026.**

Columns

General

Technical

Our cover: *Carmel Morris VK2NO took this photo straight up the barrel of her homebrew Helix antenna. See page 13. Graphic design by Sergio VK3SO.*

NEXT ISSUE: Back to Basics

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from Phil Fitzherbert.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

PICTON HAMFEST UPDATE!

Another fantastic IARS (VK2AMW) Picton Ham fest under our belt! Exciting times lie ahead for future events.

The recent hamfest held on Sunday, **31 May 2026** at the **Picton Showgrounds** was an absolute triumph for the local amateur radio community. Organized in conjunction with the Picton markets the day drew a vibrant crowd of radio operators, hobbyists, and families from across the region.

Event Highlights

- **Bustling Trade:** Car boot traders and commercial vendors set up from 6:00 am, offering everything from vintage rigs and hard-to-find components to modern radio gear.
- **High Attendance:** Affiliated clubs, including members from the Mid South Coast Amateur Radio Club (VK2HQ), Manly Warringah Radio Society (VK2MB) and the Fisher's Ghost Amateur Radio Club (VK2FG), made the annual pilgrimage to connect in person.
- **Family-Friendly Atmosphere:** Because the hamfest ran alongside the general community markets, non-amateur family members enjoyed local food vans and distinct shopping areas just a short walk away.

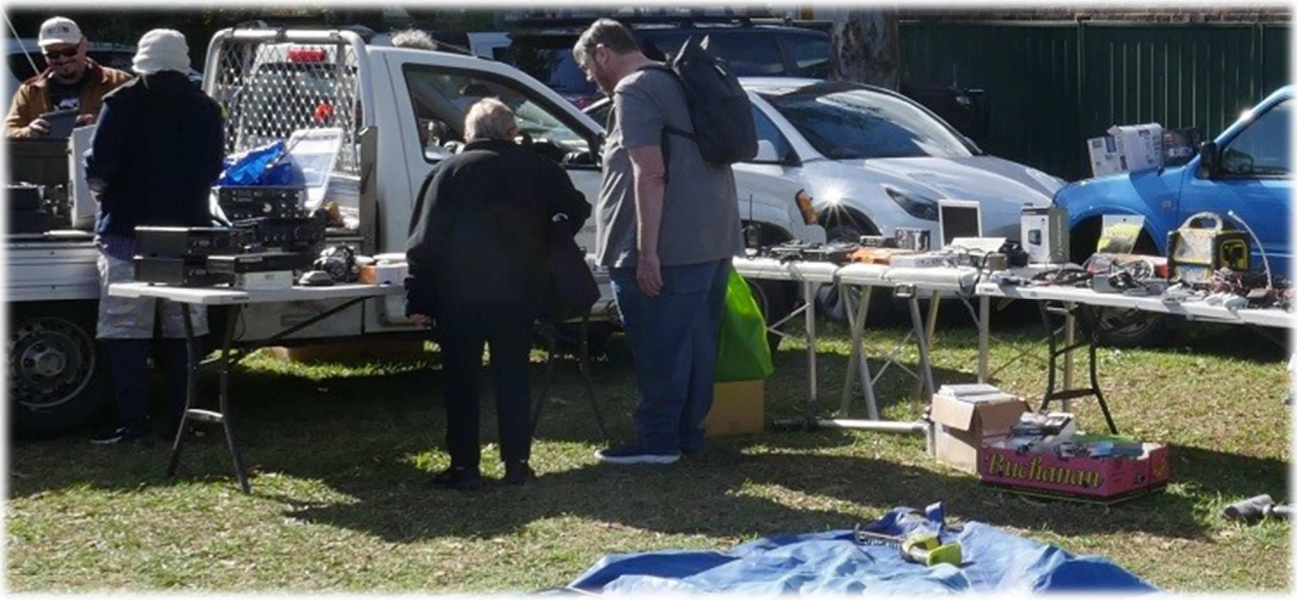
Looking to the Future

Following a previous event that suffered from heavy rain dampening vendor turnout, the beautiful weather and strong coordination by the **Picton Show Society** ensured this year's gathering was a massive success. With affordable indoor and outdoor stall spaces, high energy, and excellent community support, the future of the Picton Hamfest is looking incredibly bright moving forward.

David VK2LDW and Steve VK2BGL enjoying the sunshine and radio waves 😊

All catching up, Simon VK2XQX, Rob VK2MT, Peter, VK2DIE and Keith VK2KQB

Bargains to be had!



Happy days with the team Simon VK2XQX, Tony VK2TS, Peter VK2BIT, Rob VK2MT

Even Dog friendly, how good is that!

Looking forward to the NEXT big event which promises to attract even more people.

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Upcoming IARS meeting presentations ……………………………

Please note the changes to the meeting schedule.

There isn't a general or committee meeting every month, but that doesn't mean we skip the fun! "
Even when there's no official meeting scheduled, we still get together every month except January.

(See the schedule below — presentation topics may change.)

Doors open at 6:30pm, giving you time to settle in, but presentations and general meetings kick off after 7:30pm. The Snowball draw happens every month, except January when there are no gatherings.
Members are very welcome to arrive from 6:30pm to enjoy a cuppa and catch up with friends in the foyer before things get underway.
We need to wrap up and be out by approximately 9:30pm, so please lend a hand on your way out by popping empty cups in the correct bin and straightening your chair or putting it back if you have moved it.

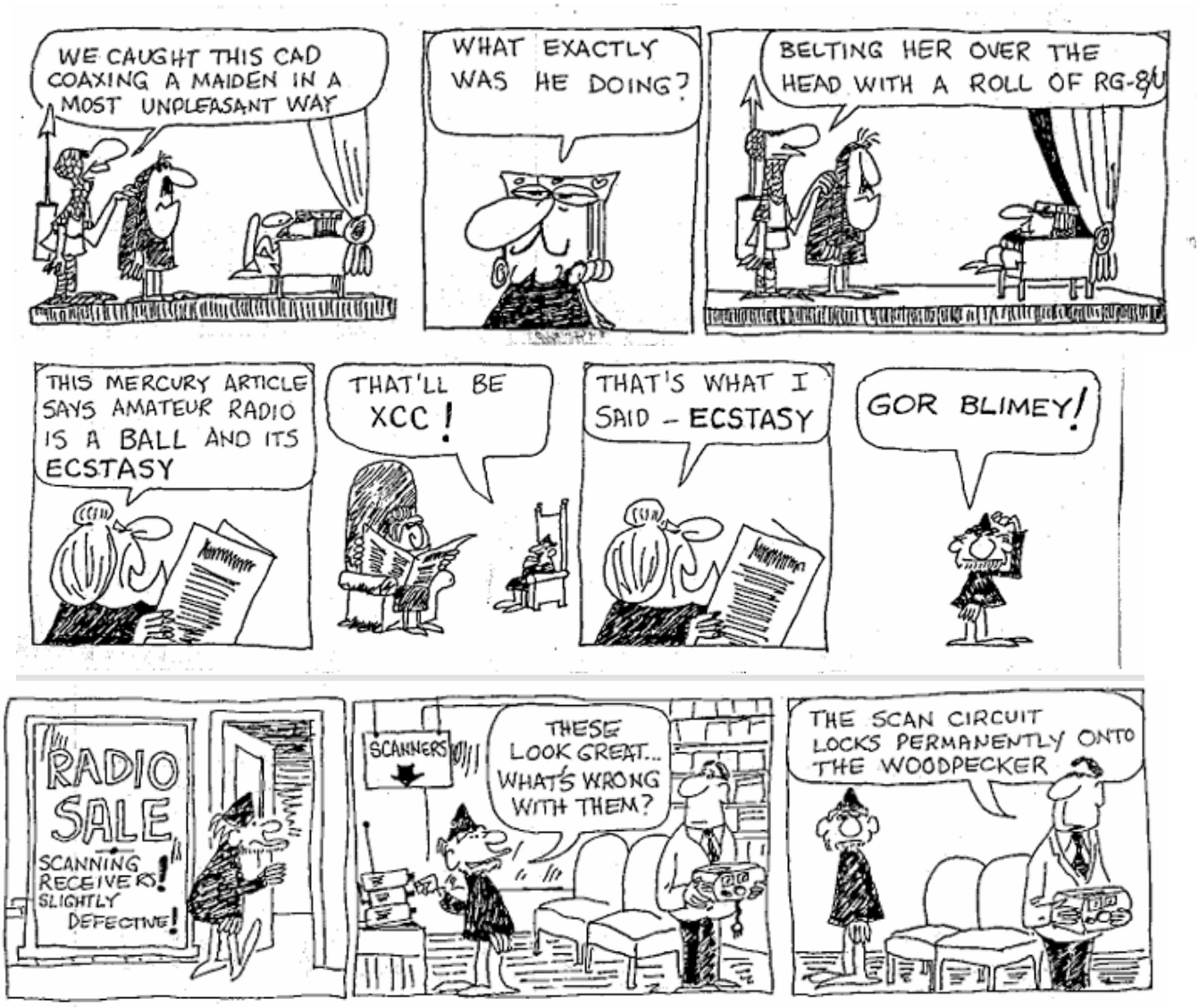
Please Note: IMPORTANT INFORMATION!
While you may feel inspired to channel your inner barista and make yourself an espresso using the coffee machine in the BlueScope foyer, we kindly ask that you refrain from doing so.
At our last meeting, an attempt to make a barista-style coffee unfortunately resulted in damage to the machine. The Visitors Centre team has since politely requested that we do not use the coffee machine.
Thank you for your understanding and cooperation.

- **July 2026** : No committee or general meeting. Doors open 6.30pm.
  Roger VK2VRK, setting up and working with APRS
- **August 2026** : Doors open 6.30pm **AGM** starts at 7.30pm with new committee members elected.
- **September 2026** : No committee or general meeting. Doors open 6.30pm
  7.30pm, Show And Tell, bring along your project to share with us
- **October 2026** : No committee meeting, doors open 6.30pm. General meeting starts 7.30pm
  Presentation starts after general meeting. Topic TBA
- **November 2026** : Committee meeting at 6.30pm. No General meeting.
  IARS Annual Auction with Simon VK2XQX. Doors open at 6.30pm for sellers for looking to sell their gear. Equipment must be booked in before the auction starts at 7.30pm. Please NO latecomers.
- **December** : No committee or general meeting. Doors open 6.30pm
  IARS year end Christmas function

Fun Corner

Please send in your funnies to iars.keithb@gmail.com

Thanks to all that sent in funnies.



The **IARS needs YOUR input and support,** any technical items, amateur radio news, any projects you would like to share, in fact any AR related goings on are welcomed.

Feedback is also very important for us as it helps maintain a good read, if you would like to see more of something, or would like to see a subject added. Please let us know iars.keithb@gmail.com

That's all for now, hopefully catch you all at the

Blue Scope visitors centre on the 14th July from 7.30pm,

73
Keith VK2KQB
IARS Secretary

IARS, Amateur Radio in the Illawarra since 1948